

**Sphecodosoma pratti, new species.**

♀. — Head and thorax black, shiny, abdomen dark red; pubescence sparse, rather long, glistening white; head elongate, facial quadrangle slightly longer than wide; eyes narrow, inner orbits straight parallel; head almost impunctate; clypeus produced, with a few punctures; mandibles red, bases black; antennæ clavate, funicle reddish below, scape reaching about one half way to ocelli; mesothorax slightly lineolated, scutellum more plainly so, both finely sparsely punctured more closely so at posterior edges; median and parapsidal grooves apparent but not deep; metathorax basally with fine rugulæ not reaching to apex, leaving a smooth shiny margin; truncation smooth, not surrounded by a carina; mesopleuræ smooth, indistinctly lineolated, metapleuræ distinctly so; tegulæ large, shiny, black inwardly, the rest translucent; wings dusky, nervures and stigma dark brown; third submarginal narrowed one half to marginal; legs black, femora robust, pubescence glistening white; first segment of abdomen black at base, smooth, sparsely punctured, remaining segments sparsely punctured, finely lineolated; pubescence on fifth segment at apex, sooty brown. Length 4 mm.

♂. — Similar, antennæ not clavate, reaching almost to metathorax, more yellowish below, abdomen black. Length 4 mm.

*Locality.* — Cotulla, Texas, May 10, 1906, on *Marilaunidium organifolium* (F. C. Pratt and J. C. Crawford colls.).

*Type.* — No. 10050, U. S. National Museum.

It resembles the genus *Proteraner* in that both sexes come out at the same time in the spring, which is not the case in the other forms.

## NOTES ON SOME SPECIES OF THE GENUS HALICTUS.

BY J. C. CRAWFORD,

WASHINGTON, D. C.

The species included in this paper are those which have no green on them and which are found in the United States and Canada. In using the table it will be necessary to consult the detailed descriptions of the species before one can be certain of the identifications, since there are still many undescribed forms in North America.

### TABLE FOR THE FEMALES.

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|--|--------------|
| 1. Apical margins of abdominal segments with hair bands; none of the wing veins obsolescent..... | 2            |
| No hair bands on apical margins of segments; some of the wing veins obsolescent.....             | 5            |
| 2. Cheeks armed with a strong spine.....   | ligatus Say. |
| Cheeks not armed.....  | 3            |

3. Legs mostly red.....*parallelus* Say.  
Legs mostly dark; red, if any, confined to hind legs.....4
4. Hair bands cream colored, very broad; tegulæ almost impunctate.  
*farinosus* Smith.  
Hair bands white, narrow; tegulæ punctured except medially.  
*lerouxii* Lepeletier.
5. Second transverse cubital not obsolescent.....6  
Second transverse cubital obsolescent.....16
6. Base of metathorax finely wrinkled.....7  
Base of metathorax coarsely rugose.....13
7. Mesothorax almost impunctate.....*titusi* Crawford.  
Mesothorax closely punctured.....8
8. Truncation of metathorax surrounded by a salient rim.....*fuscipennis* Smith.  
Truncation not surrounded by a salient rim.....9
9. Punctures of mesothorax very dense, separated from each other by less than their  
own diameter.....*bardus* Cresson.  
Punctures of mesothorax more sparse, widely separated, at least medially.....10
10. Hind tibiæ, hind and middle tarsi red.....*mellipes* Crawford.  
Legs dark.....11
11. Base of metathorax separated from truncation by a sharp ridge...*coriaceus* Smith.  
Base of metathorax without a sharp ridge at rear.....12
12. Wings yellowish, hair bands creamy or yellowish.....*trizonatus* Cresson.  
Wings grayish, hair bands white.....*forbesii* Robertson.
13. A band on the middle of first segment; wings very clear....*sisymbrii* Cockerell.  
No band on first segment; wings more dusky.....14
14. Rugæ finer, straight, parallel.....*olympicæ* Cockerell.  
Rugæ coarse, irregular, not parallel.....15
15. Base of metathorax with a semicircular enclosure.....*pacificus* Cockerell.  
Base of metathorax without a semicircular enclosure.....*similis* Smith.
16. Abdomen red.....17  
Abdomen not red.....19
17. Pubescence of head and thorax appressed, mesothorax very shiny, almost im-  
punctate; abdomen with apical segments largely black.....*arizonensis* n. sp.  
Pubescence of head and thorax not appressed.....18
18. Facial quadrangle much longer than broad, punctures of head strong.  
*ovaliceps* Cockerell.  
Facial quadrangle not much longer than broad, punctures of head indistinct.  
*swenki* Crawford.
19. Tegulæ large, punctured all over.....20  
Tegulæ not large and punctured all over.....22
20. Metathorax with a small triangular enclosure.....*nelumbonis* Robertson.  
No triangular enclosure on metathorax.....21
21. Mesothorax coarsely punctured.....*kincaidii* Cockerell.  
Mesothorax finely punctured.....*glabriventris* Crawford.
22. Legs entirely light testaceous.. *birkmanni* Crawford.  
Legs mostly dark.....23
23. Metathorax except basal enclosure covered with pubescence concealing the  
surface, especially on truncation.....24

- Surface of metathorax not concealed by pubescence.....25
24. Mesothorax shiny, sparsely punctured, not distinctly lineolated.  
*angustior* Cockerell.  
 Mesothorax dull, closely punctured, distinctly lineolated.....*robertsoni* Crawford.
25. Inner spur of hind tibiæ simple, or with saw-like teeth, or very oblique teeth hardly longer than broad at base.....26  
 Inner spur with long spines, the basal ones at least being several times as long as broad at base.....31
26. Mesothorax very dull from lineolation ; facial quadrangle longer than broad.  
*dasiphoræ* Cockerell.  
 Mesothorax somewhat shiny, facial quadrangle as broad or broader than long...27
27. Base of metathorax coarsely rugose ; truncation coarsely sculptured.  
*arcuatus* Robertson.  
 Base of metathorax finely wrinkled ; truncation not coarsely sculptured.....28
28. First abdominal segment closely, strongly punctured, size large, about 9 mm.  
*robustus* Crawford.  
 First segment sparsely weakly punctured, smaller .....29
29. Wings clear hyaline, abdomen brownish, apical margins broadly whitish.  
*amicus* Cockerell.  
 Wings dusky, abdomen darker.....30
30. Face above antennæ closely punctured ; metathorax finely irregularly wrinkled.  
*latifrons* Crawford.  
 Face above antennæ sparsely indistinctly punctured ; metathorax with fine irregularly longitudinal rugulæ.....*peconsensis* Crawford.
31. Inner hind spur with many long teeth.....*pectinatus* Robertson.  
 Inner hind spur with 2-7 teeth.....32
32. Antennæ red beneath ; abdomen brown, the first segment strongly transversely striate.....*subobscurus* Cockerell.  
 Antennæ darker beneath, abdomen darker, first segment at most finely transversely lineolate .....33
33. First abdominal segment closely distinctly punctured all over.  
*fedorensis* Crawford.  
 First segment impunctate or sparsely punctate apically .....34
34. Stigma brown, usually very dark.....35  
 Stigma honey color .....38
35. Base of metathorax finely wrinkled, rounded behind.....36  
 Base of metathorax rugose, ending at a carina of enclosure .....37
36. Wrinkles of metathorax more numerous, punctures of mesothorax sparser, weaker, punctures of face less strong.....*quadrinaculatus* Robertson  
 Wrinkles of metathorax less numerous, punctures of mesothorax closer, stronger, punctures of face stronger .....*divergens* Lovell.
37. Rugæ of metathorax stronger, enclosure semicircular, distinct, punctures of mesothorax strong, coarser.....*pectoralis* Smith.  
 Rugæ of metathorax weaker, enclosure indistinct, punctures of mesothorax finer, sparser.....*pectoraloides* Cockerell.
38. Larger species over 8 mm.....42  
 Smaller species not over 7 mm.....39

39. Abdomen bare, no hair patches or appressed pubescence on segments; facial quadrangle slightly longer than broad.....*foxii* Robertson.  
Abdomen with hair patches of appressed pubescence on bases of segments; facial quadrangle as broad, or broader than long .. .....40
40. Abdomen brown, rather dull, patches large, covering fourth segment entirely.  
*cordleyi* Crawford.  
Abdomen darker, shiny, patches of hair smaller, not covering fourth segment....41
41. Smaller, less than 6 mm.; wrinkles of metathorax few, failing apically, wings hyaline.....*nigrescens* Crawford.  
Larger, 7 mm.; wrinkles of metathorax more numerous, reaching to apex, wings yellowish .....*niger* Viereck.
42. Wings clear, hyaline, very ample; wrinkles of metathorax not reaching to apex .....43  
Wings yellowish or dusky, wrinkles or rugæ reaching to apex.....44
43. First abdominal segment very delicately but distinctly punctured; punctures of mesothorax sparser .....*aberrans* Crawford.  
First segment almost entirely impunctate; punctures of mesothorax closer.  
*galpinsiae* Cockerell.
44. Mesothorax dull from strong lineolation .....45  
Mesothorax shiny, lineolation obscure.....46
45. Smaller, hardly 7.5 mm.; abdomen shiny, basal hair patches distinct.  
*niger* Viereck.  
Larger, over 8 mm.; abdomen dull, hair patches not apparent.*quebecensis* n. sp.
46. Rugæ of metathorax very coarse, punctures of mesothorax sparser.  
*truncatus* Robertson.  
Rugæ of metathorax fine, punctures of mesothorax close.....*cooleyi* Crawford.

The following species are not included in the above table: *fartus* Vachal; *lusorius* Cresson; *crassicornis* Kirby; *discus* Smith which would run to *similis* in the table; *egregius* Vachal which is, I think, *trizonatus* or a closely allied form; *diatretus* Vachal and *synthyridis* Cockerell which would both run close to *foxii* in the table and which are closely related to each other, especially in the males.

The following table will serve to separate all the species known to me in the male sex and the notes to indicate where some of the others will run.

#### TABLE FOR THE MALES.

1. Apical margins of abdominal segments with strong hair bands.....2  
No hair bands on apical margins of segments.....5
2. Wings deep yellowish; legs yellow and red.....*parallelus* Say.  
Wings not deep yellow; legs yellow and black.....3
3. Antennæ fulvous beneath.....*ligatus* Say.  
Antennæ only obscurely reddish beneath.....4
4. Tegulæ coarsely punctured all over.....*lerouxii* Lepeletier.  
Tegulæ not punctured all over.....*farinosus* Smith.

5. Face and legs entirely dark.....6  
Face and legs not entirely dark.....10

6. Tegulæ punctured all over ; base of metathorax with a triangular enclosure.  
*nelumbonis* Robertson.  
Tegulæ not punctured all over ; metathorax not with a triangular enclosure.....7

7. Small species, about 5 mm.....8  
Larger species, 7 mm. or more.....9

8. Punctures of mesothorax fine, sparse ; rugæ of metathorax finer, enclosure indistinct.....*pectoraloides* Cockerell.  
Punctures of mesothorax coarse, close ; rugæ of metathorax coarse, enclosure semicircular, distinct.....*pectoralis* Smith.

9. Wings clear, pubescence grayish.....*sisymbrii* Cockerell.  
Wings dusky ; bands on abdomen not complete.....*olympicæ* Cockerell.

10. Clypeus light anteriorly, legs dark.....11  
Legs more or less light.....14

11. Head large quadrate, mandibles long, apex of one reaching to base of other.  
*coriaceus* Smith.  
Head and mandibles normal.....12

12. Base of metathorax coarsely rugose.....*similis* Smith  
Base of metathorax finely wrinkled \*.....13

13. Wings dusky, metathorax at apex with a carina.....*fuscipennis* Smith.  
Wings yellowish, no carina at apex of metathorax.....*trizonatus* Cresson.

14. Only the tarsi whitish.....15  
Tibiæ more or less light.....17

15. Head and thorax smooth, shiny, almost impunctate, pubescence long, abundant.  
*titusi* Crawford.  
Head and thorax closely punctured.....16

16. Smaller, antennæ red beneath.....*ruficornis* Crawford.  
Larger, over 8 mm., antennæ dark beneath.....*forbesii* Robt.

17. Pubescence of head and thorax appressed, scale-like.....*galpinsie* Cockerell.  
Pubescence of head and thorax not appressed.....18

18. Antennæ short, hardly reaching the tegulæ.....*foxii* Robertson.  
Antennæ long, reaching to metathorax at least.....19

19. Tubercles dark †.....20  
Tubercles with a light spot. ‡.....23

20. Hardly 5 mm. long.....*quadrinaculatus* Robertson.  
Over 6 mm. long.....21

21. Mesothorax dull from strong lineolation.....*niger* Viereck  
Mesothorax shiny, lineolation obscure.....22

22. Face narrow, metathorax finely rugose.....*pulvillabris* Vachal  
Face broad, metathorax coarsely rugose.....*arcuatus* Robertson.

\* Here apparently run *diatretus* Vachal and *synthyridis* Cockerell, which are much smaller species.

† Here run *pacificus* Cockerell; *granosus* Vachal; *peraltus* Cockerell; *nigricollis* Vachal, all unknown to me.

‡ Here run *arctous* Vachal; *gularis* Vachal; *nigridens* Vachal which I have not seen.

23. Antennæ reddish beneath, mesothorax dull, the punctures minute; about  $6\frac{1}{2}$  mm. long.....*cordleyi* Crawford.  
 Antennæ dark beneath, mesothorax shiny, punctures larger, about 8 mm. long...24
24. Rugæ of metathorax very coarse.....*truncatus* Robertson.  
 Rugæ of metathorax fine .....25
25. Punctures of mesothorax close, of first abdominal segment distinct.  
*cooley* Crawford.  
 Punctures of mesothorax sparse, of abdomen minute .....*aberrans* Crawford.

The following, described from the males only, have not been placed: *distinctus* Provancher, *cinctipes* Provancher.

**Halictus bardus Cresson.**

I have not seen authentic material of this species and the identification may be wrong.

**Halictus trizonatus Cresson.**

Either this is a very variable species or there are several closely allied species in the western United States, but it will take a large series of specimens to decide this point. *H. egregius* Vachal seems to belong here and also the male described by him as *colatus*.

**Halictus similis Smith.**

The species which I have always called by this name, is called *discus* by Professor Cockerell, according to notes sent me by Mr. J. H. Lovell. The two species would run out at the same point in the table. Comparison with the types is needed to determine which species is found in the New England states.

**Halictus subobscurus Cockerell.**

Comparison of the types shows the species described by me as *cockerelli* to be a synonym of this species.

**Halictus divergens Lovell.**

This is very closely allied to *quadrimaculatus* and may be only a variety.

**Halictus diatretus Vachal and Halictus synthyridis Cockerell.**

These seem to be very close to each other and to *foxii* but both differ from that species in the males having the legs entirely dark.

**Halictus truncatus Robertson.**

*H. fulgidus* Crawford will have to go as a synonym of this species.

**Halictus galpinsiæ Cockerell.**

In the females this species and *H. aberrans* Crawford are very closely related as shown by the table but in the males they are easily separated, the male of *galpinsiæ* having appressed pubescence. This seems without any doubt to be the form described by Vachal as *gelidus*.



**Halictus arizonensis, new species.**

♀. — Head and thorax black, shiny, almost impunctate and covered with appressed white pubescence; antennæ beneath, clypeus apically, tubercles and legs reddish testaceous; metathorax finely wrinkled at base, the apex smooth, shiny; wings white, stigma and nervures very light testaceous, only the subcosta dark; hind inner spur with about three long teeth; first two segments of abdomen mostly reddish, rest black medially, laterally reddish, except the last which is entirely reddish; apical margins of segments broadly whitish. Length about  $5\frac{1}{4}$  mm.

One specimen from Arizona in the C. F. Baker collection.

*Type*. — No. 10930, U. S. National Museum.

**Halictus quebecensis, new species.**

♀. — Black, head and thorax lineolate, dull, facial quadrangle about square, face below antennæ sparsely finely obliquely punctured, punctures opening downward and outward; punctures at sides of face becoming close only some distance above antennæ; rest of face above antennæ closely finely punctured; vertical striæ of the cheeks very apparent; pubescence of head and thorax short, thin, ochraceous; mesothorax finely rather sparsely punctured; median groove well impressed, parapsidal grooves distinct; mesopleuræ rather finely rugulose, metapleuræ anteriorly finely so, posteriorly finely lineolate and only slightly rugulose; base of metathorax with a few rather strong irregular longitudinal plicæ reaching apex; truncation finely lineolate and with a few scattered punctures, surrounded by a salient rim, faint above medially but distinct at upper lateral angles; wings yellowish, darkened apically; nervures and stigma honey-color, subcosta dark; second submarginal broad; third narrowed about one third to marginal; tegulæ dark, with a red center and a narrow light border; legs dark, apical joints of tarsi ferruginous, pubescence of legs ochraceous, becoming reddish on apical joints of tarsi; hind inner spur with about five long teeth; abdomen black, somewhat shiny, with sparse ochraceous pubescence at base and apex, and on apical margins 2-4 laterally and bases 2-3 laterally very faint white hair spots, that surrounding the anal rima reddish; abdomen finely transversely lineolate almost impunctate, under a high power showing a few scattered very fine punctures. Length about 8 mm.

Montreal Island, Quebec, May 21, 1904, received from C. F. Baker; also North Sangus, Mass. (J. C. Crawford coll.).

**Halictus ligatus Say.**

In the tables the various forms in which the females have the cheeks armed with a spine are not separated from this species, since they are very closely allied and an abundance of material is needed to work out their status. These forms are *armaticeps* Cresson, *capitosus* Smith, *texasus* Cresson, and *townsendi* Cockerell.